Table 5 – Chemical Specific ARARs			
Regulatory Citation	**Description of Regulatory Requirement**	**Rationale for Including**	**Application**
Groundwater			
WAC 173-340-720(2) "Potable Groundwater Defined"	Groundwater shall be classified as potable unless it does not serve as a current or potential source of drinking water and is present in insufficient quantity to yield greater than 0.5 gallons per minute on a sustainable basis or contains natural background concentrations of organic or inorganic constituents that make use as a drinking water source impracticable. Groundwater containing total dissolved solids at concentrations greater than 10,000 mg/l shall normally be considered to have fulfilled this requirement.	**Relevant and Appropriate** in Upper Aquifer groundwater, which is classified as non-potable because total dissolved solids are present at concentrations greater than 10,000 mg/l. Lower aquifer groundwater is potable and is currently being used by the plant to provide water for on-site operations.	Cleanup levels in the upper aquifer are driven by other considerations (discharge to adjacent marine surface waters), not by drinking water standards.
WAC 173-201A-240(5) "Water Quality Standards for Surface Waters of the State of Washington," Clean Water Act Section 303, 71 FR 18935-18936 (November 27, 2002) Federal Ambient Water Quality Criteria	Establishes chemical water quality standards for surface waters of the State of Washington for protection of aquatic life.	**Applicable** in setting effluent limits for the discharge of groundwater to surface water in Eagle Harbor and Puget Sound. The elevation of groundwater in the Upper Aquifer will need to be maintained at or below a certain level in order to minimize further transport of contaminants to the Lower Aquifer. The optimal level will be maintained by discharging groundwater to Eagle Harbor. The discharge may not violate state water quality standards.	Filters in the groundwater collection and discharge system will be used to treat contaminated groundwater, if necessary, to ensure compliance with water quality standards.

Soil			
WAC 173-340-740(3) "Method B soil cleanup levels for unrestricted land use" WAC 173-340-740(5) "Adjustments to cleanup levels"	Requires that soil cleanup levels result in no significant adverse effect on the protection and propogation of terrestrial ecological receptors; will not cause contamination of groundwater and are estimated to result in no acute or chronic noncarcinogenic toxic effects on human health using a hazard quotient of 1 and an estimated excess cancer risk less than or equal to 1×10^{-6}. Soil cleanup levels are adjusted downward to take into account multiple hazardous substances and/or exposures so that the hazard index does not exceed 1 and the total excess cancer risk does not exceed 1×10^{-5}. These substantive risk standards must be met	Applicable MTCA requirements for total individual and multiple chemical risk are substantive standards that must be met. WAC 173-340-740(3) ~~and WAC 173-340-740(5)~~ methodologies and procedures for calculating risk are not substantive requirements and need not be employed in determining the risk based cleanup standards.	Cleanup levels for soils used to construct the surface of the cap will meet or exceed the MTCA risk level.
WAC 173-340-740(6) "Point of compliance"	For soil cleanup levels based on human exposure via direct contact the point of compliance is established in soils from the ground surface to fifteen feet below the ground surface. For containment remedies, a point of compliance of less than fifteen feet can be established if the selected remedy is protective, is permanent to the maximum extent practicable,	Requirements for containment remedies are **relevant and appropriate**. Contaminants in solidified/immobile form will be left in soils at concentrations exceeding risk levels beneath the cap.	The final site cap, along with institutional controls to limit excavation or drilling below the cap, will prevent exposure to contaminated soils left below the cap.

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	includes institutional controls to prohibit actives that would compromise the containment system, and includes compliance monitoring. The types, levels, and amount of contaminants remaining on-site and the measures should be able to prevent migration and direct contact.		
Sediment			
Amended WAC 173-204-560(2) "Sediment cleanup levels" WAC 173-204-560(3) "Sediment cleanup objectives" and WAC 174-204-320 "Marine Sediment Quality Standards"	Requires that the sediment cleanup level be set at the sediment cleanup objective, which is defined as the **highest** of: risk-based levels, natural background, or practical quantitation level. Risk-based levels are defined as the **lowest** of: The concentration of the contaminant based on protection of human health; The concentration or level of biological effects of the contaminant based on benthic toxicity; and the concentration or level of biological effects of the contaminant estimated to result in no adverse effects to higher trophic level species. The sediment cleanup level may be adjusted upward to no higher than the cleanup screening level based on an evaluation whether it is not technically possible to achieve the sediment cleanup level and	Washington SMS requirements for setting cleanup levels are **applicable** to remedy for the intertidal sediments	The selected cleanup levels for protection of the benthic community are the SMS ~~MTCA~~ sediment cleanup objective levels. These levels are higher than both natural background and the PQL for sediment COCs at the Wyckoff site.

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Commented [ES(3]: Establishment of a cleanup level will be dependent on the chemical of concern (e.g. what receptor is most sensitive, does it bioaccumulate?). In the case of carcinogenic PAHs, the benthic community sediment cleanup objective is not the lowest of the risk-based criteria at the site.

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	whether meeting the sediment cleanup level will have a net adverse environmental impact on the aquatic environment.		
WAC 173-204-560(6) "Point of compliance"	Requires that the point of compliance be established within the biologically active zone but may be established at a different location to protect human health.	Washington SMS requirements for setting points of compliance are **applicable** to the remedy for intertidal sediments.	The point of compliance for intertidal sediments (the top two feet) is based on the depth of shellfish collection activities at the site – this is both the biologically active zone and reasonable maximum depth of human exposure for intertidal sediments at the Wyckoff site.
WAC 173-204-561 "Sediment cleanup levels based on protection of human health"	Sets forth requirements for human health risk-based cleanup levels set at the sediment cleanup objective. For human health non-carcinogenic effects, the sediment cleanup objective shall result in a hazard quotient of 1 and a cumulative hazard index 1 for multiple contaminants and/or exposure pathways. For individual carcinogens, the sediment cleanup objective cleanup level shall result in an estimated lifetime excess cancer risk of 1 x 10^{-6}. For multiple carcinogens and/or exposure pathways exceeding 1 x 10^{-5} lifetime excess cancer risk, the sediment cleanup objectives shall be adjusted downward to 1 x 10^{-5}.	Washington SMS requirements for setting cleanup levels for protection of human health are **applicable** to cleanup of nearshore sediments.	Cleanup levels for multiple carcinogens were selected based on an estimated lifetime cancer risk of 1 x 10^{-6}. The cleanup level for the one COC that is not a carcinogen corresponds to an HQ of 1.

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The point of compliance for benthic community is top 10cm.

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Reference to the "Reasonable maximum exposure" language in 173-204-561 is missing.

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WAC 173-204-562 "Sediment cleanup levels based on protection of the benthic community in marine and low salinity sediment"	Sets forth chemical and biological criteria for the protection of marine benthic invertebrates.	**Applicable** Washington SMS requirements for setting cleanup levels for protection of benthic invertebrates relevant to cleanup of nearshore sediments.	The selected cleanup levels for protection of the benthic community are the SMS ~~MTCA~~ sediment cleanup objective levels.